WTSP-Cxx-10D(E)

SFP28 25Gb/s 10km Dual CWDM

Part Number	Data Rate	Temperature
WTSP-Cxx-10D	25.78Gbps	0°C~+70°C



1. Product Overview

The WTSP-Cxx-10D(E) Transceiver is intended for 10km reach service from 24.33Gb/s to 25.78Gb/s CWDM C27~C37 single mode high-speed communications equipment where low-cost, extraordinary performance and reliability are essential. It consumes low power, operates base on 3.3V DC power supply and is offered in the commercial/extend temperature range. They are compliant with SFP28 MSA, SFF-8431 and SFF-8432.

The low jitter and low bit error rate optical assembly features a C27~C37 DML laser transmitter and PIN/TIA receiver. It utilizes internal clock and data recovery (CDR) units on transmitter and the receiver chains for low jitter compliance. The differential AC coupled Tx and Rx data interfaces are CML compatible. The device is Class I laser safety compliant.

Features

- Operating data rate up to 25.78Gbps
- Up to 10km transmission distance
- High sensitivity Pin photodiode and TIA
- Rate Adaptation
- LC duplex connector
- Hot pluggable 20pin connector
- Low power consumption <1.2 W
- Single +3.3V±5% power supply
- Compliant with SFF-8472
- Fully RoHS Compliant
- Case operating temperature
- Commercial: 0°C to +70°C

Applications

- 25G Ethernet
- CPRI Option

2. Ordering Information

Part No.	Bit Rate (Gbps)	Laser	Distance	Fiber Type	Temp
WTSP-Cxx-10D	25.78Gbps	CWDM PIN	10km	SMF	0°C~+70°C
WTSP-Cxx-10DE	25.78Gbps	CWDM PIN	10km	SMF	-20°C~+85°C

3. Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	oC	-40	85
Relative Humidity	RH	%	0	95

4. Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature Range	Tc	oC	0		70
Operating Case Temperature Range	Tc	oC	-20		85
Power Supply Voltage	Vcc	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s		25.78	
Bit Error Ratio	BER				5*10-5
Max Supported Link Length	L	Km			10

5. Optical Parameters

Parameter	Symbol	Unit	Min	Typ	Max	Note
Nominal Wavelength	λ	nm	1271,1291,1311,1331,1351,1371	1271,1291,1311,1331,1351,1371	1271,1291,1311,1331,1351,1371	
Wavelength Drift	Δλ	nm	-6.5		+6.5	
Average Output Power	Pav	dBm	1		7.5	
Spectral Width (-20dB)		nm			1	
Extinction Ratio	ER	dB	3.5			
Side Mode Suppression Ratio	SMSR	dB	30			
Average Launch Power of OFF Transmitter	POFF	dBm			-30	
Relative Intensity Noise	RIN	dB/Hz			-128	
Center Wavelength	λC	nm	1260		1620	
Receiver Sensitivity(OMA)	RSENSE	dBm			-14	1
Receiver Overload (OMA)	Pmax	dBm	1			
Optical Return Loss		dB			-26	
LOS Assert	LOSA	dBm	-30			
LOS De-Assert LOS	LOSD	dBm			-17	

Parameter	Symbol	Unit	Min	Typ	Max	Note
LOS Hysteresis		dB	0.5			

6. Electrical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Input Differential Impedance	RIN	Ω		100		
Single-ended Data Input Swing	VIN	mVp-p	90		450	
Transmit Disable Voltage	VDIS	V	2		VCCHOST	
Transmit Enable Voltage	VEN	V	VEE		VEE+0.8	
Transmit Fault Assert Voltage	VFA	V	2		VCCHOST	
Transmit Fault De-Assert Voltage	VFDA	V	VEE		VEE+0.4	
Receiver	Receiver	Receiver	Receiver	Receiver	Receiver	Receiver
Single-ended Data Output Swing	VOD	mVp-p	200		450	
LOS Fault	VLOSFT	V	2		VCCHOST	
LOS Normal	VLOSNR	V	VEE		VEE+0.4	

7. Digital Diagnostics

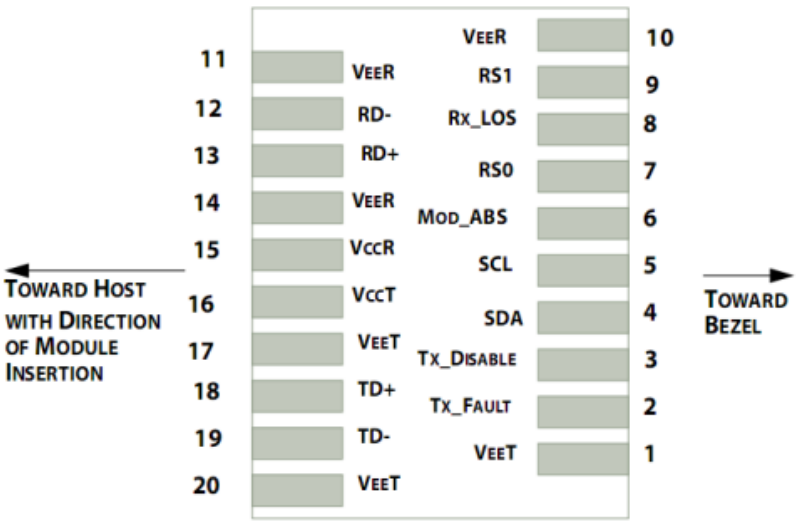
Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

8. Pin Descriptions

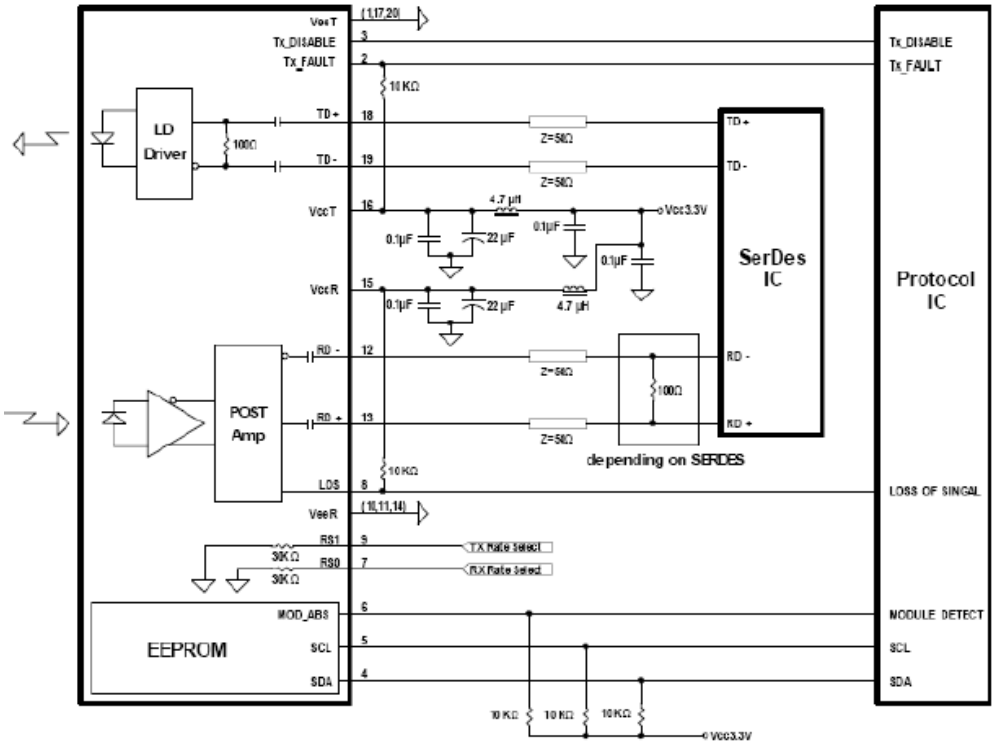
Pin	Symbol	Name	Description
1,17,20	VeeT	Transmitter Signal Ground	Connected to signal ground on the host board.
2	TX Fault	Transmitter Fault Out (OC)	Module transmitter fault output.
3	TX Disable	Transmitter Disable In (LVTTL)	Module transmitter disable control.
4	SDA	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.

Pin	Symbol	Name	Description
5	SCL	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
6	MOD-ABS	Module Definition Identifiers	Serial ID with SFF 8472 Diagnostics Module Definition pins should be pulled up to Host Vcc with 10 kΩ resistors.
7	RS0	Receiver Rate Select (LVTTL) Transmitter Rate Select (LVTTL)	Rate select 0(Rx):Low=CDR Bypass ; High=CDR Select Rate select 1(Tx):Low=CDR Bypass ; High=CDR Select
9	RS1	Receiver Rate Select (LVTTL) Transmitter Rate Select (LVTTL)	Rate select 0(Rx):Low=CDR Bypass ; High=CDR Select Rate select 1(Tx):Low=CDR Bypass ; High=CDR Select
8	LOS	Loss of Signal Out (OC)	Receiver loss of signal.
10,11,14	VeeR	Receiver Signal Ground	Connected to signal ground on the host board.
12	RD-	Receiver Negative DATA Out (CML)	Receiver inverted data output, internally AC coupled and terminated
13	RD+	Receiver Positive DATA Out (CML)	Receiver non-inverted data output, internally AC coupled and terminated.
15	VccR	Receiver Power Supply	Receiver Power 3.3V Supply.
16	VccT	Transmitter Power Supply	Transmitter Power 3.3V Supply.
18	TD+	Transmitter Positive DATA In (CML)	Transmitter non-inverted data input, internally AC coupled and terminated.
19	TD-	Transmitter Negative DATA In (CML)	Transmitter inverted data Input, internally AC coupled and terminated.

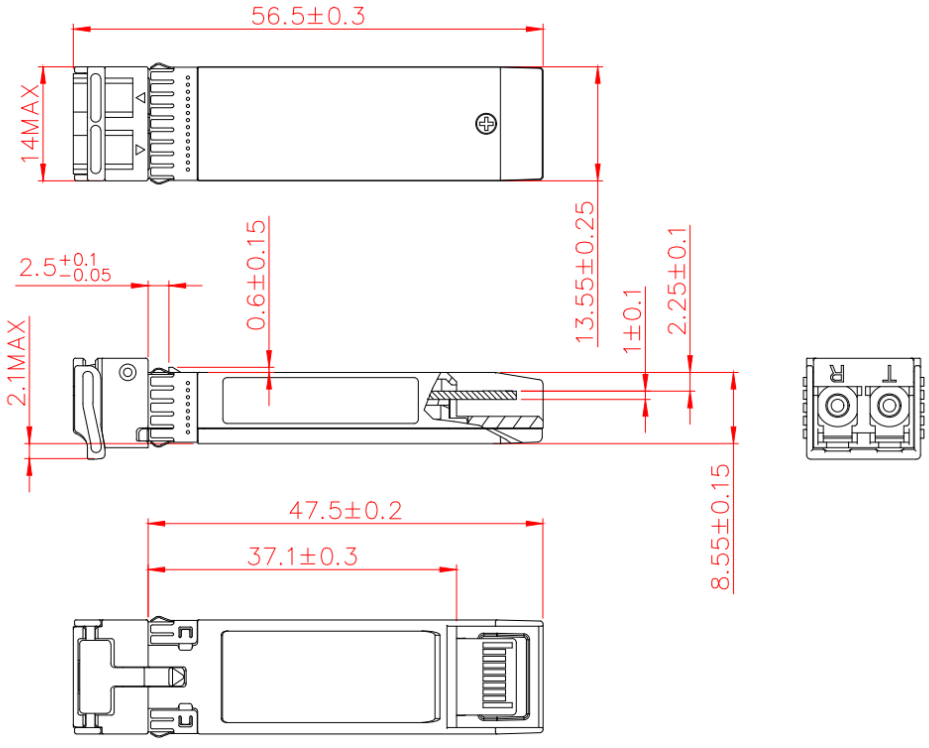
9. Pin Assignment



10. Recommended Interface Circuit



11. Mechanical Specifications



12. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek